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HINTS

TO

The Amateur Gardeners

OF

SOUTHERN INDIA.

BY

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"What is worth doing at all, is worth doing well."

No. 2.

FLORA DOMESTICA.

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CHARACTER AND DURATION OF PLANTS.

Annuals.—By this name all plants are designated that flower, perfect their seeds and perish in the same season.

Biennials—Are plants that require two years to develop ...owth and then decay.

Perennials.—Plants growing for many seasons and flowering annually, their roots remain alive for a series of years. Perennials have herbaceous stems which continue yearly to flower and decay.

The division of the plants into annuals, biennials, and perennials, is according to the duration of their roots, however, this varies under climatic influences. A plant considered annual in a northern climate, is in many cases biennial or even perennial in the tropics, on the other hand perennials of the tropics often become annuals in a northern climate.

...roduced from ... *plants.*—These are natives of the country, in- the beauty of their floeir wild state into our gardens, either for

Exotics.—Plants that ha...rs, or botanical peculiarities. parts of the globe. The greater ... been introduced from other in Indian gardens, belong to this class, many of pretty flowers, become acclimatized and grow freely. of which have

Herbaceous plants.—Plants with soft succulent stem... or stalks which die to the root every year; of herbaceous plants, some are annual stem and root, some are biennial, existing two years, others perennial existing for many years, by their ...ts retaining vitality.

ro... *plants.*—These differ from the above in conse- *Shrub*... ...ir ligneous character. A shrub is less than a quence of th... ...ermanent woody stems dividing from the tree, having seve...

bottom. They are not unlike trees as to their length of duration, but seldom rise higher than twelve feet. They are divided into two classes—Deciduous, and Evergreen. Deciduous are such as lose their foliage entirely at certain seasons. Evergreen retaining the foliage until the new appears, when it gradually falls off.

Colors of Flowers.—The prevailing colors are yel scarlet, red, pink, white, orange, blue and purple, in tints.

PROPAGATION.

Division of the roots.—A simple mode of increasing a sp. or species, mostly adopted in the case of herbaceous plants. The roots of a growing plant are partly uncovered and a portion or portions carefully removed by the aid of a sharp knife if necessary; the plant operated upon is carefully covered up again, and the severed portions planted and shaded from the sun till they take root.

Suckers.—This name is applied to young shoots out from the roots of plants, in the vicinity of th tem. may be successfully removed during the rains with a portion of the root attached and plante When a tree or shrub has a tendency to throw o suckers, it may safely be inferred that portions of th root will produce young plants if cut into length about one inch and a half, and planted horizontally fine sand one quarter of an inch deep.

Layers.—This is a mode of propagation only necessary in some cases in India, it being useful as a means of increasing plants, that do not strike readily from cuttings. The process is very simple, yet one of great uncertainty with Indian gardeners, this arises from their not using a knife in the operation, it is almost needless to say that a good knife is to the gardener, what the lancet is to the surgeon, invaluable. The operation is conducted as fo : A branch of the

tree or shrub to be operated upon is gently bent down to the ground; at the part intended to be inserted in the soil an incision is made, about one inch in length; the knife, which ought to be very sharp, is inserted about one-eighth of an inch below a bud, and gently drawn up, taking care to avoid cutting into the pith or centre of the branch, into the incision made, a small piece of stick should be put to keep it open for the purpose of admitting the soil, then plant two inches deep, taking care to bend the layer down regularly to prevent it from breaking, a little fine sand round the incision is useful, the layer should be carefully pegged to prevent moving about or springing up; if large, it should be tied to a stake. This operation requires patience and a steady hand, it very seldom fails. Passion flowers may be rooted this way in three weeks or a month.

Pipings.—This is a process, generally adopted for the propagation of Pinks, Carnations, and Picotees; the young shoots are pulled off by the hand. the ends cleaned and cut smooth with a sharp knife. The most successful way to treat after being so cleaned is, to put the ends in water for a day before planting: they root very well in boxes or shallow seed pots during the rains, in a soil more approaching to clay than sand.

Cuttings—Will be treated of in a future issue.

CLIMBING PLANTS.

It is not judicious to interfere too much with this class of plants, for the purpose of restraining their young shoots. If they are inclined to grow into an entangled mass they should be thinned out occasionally, but in other respects they succeed best when allowed their liberty. They are the wild denizens of the jungle and will not suffer men to control them with impunity. The true method to manage such a wild nature, is freedom of growth on the one side, and

systematic order on the other. They ought not to be brought too near a dwelling, nor in any situation frequented by children or domestics, unless they are kept clear from the ground, affording as they do, a harbour for snakes when allowed to accumulate into a mass.

TRELLISES.

This is certainly one of the bad features of domestic landscape gardening in Madras. Almost every house has its arched trellis way in front, the object of which I have been unable to discover? unless it be to perpetuate the advice of Franklin "learn to stoop." If creepers are introduced into the garden, in front of the house, they should be placed on horizontal or globular trellises about 2 feet from the ground, or made in any form fancy may dictate. If high trellises are used they should be put as far from the house as possible.

FLOWER-POTS.

The great object of domestic floriculture being to improve the taste for what is beautiful and ornamental, those who are interested in such a pursuit ought to endeavour, as much as possible, to improve the present inelegant shaped flower pots, in general use. There is no difficulty in doing so, patterns can be seen any time at the Horticultural Gardens. The following dimensions will aid as a guide, $3\frac{1}{2}$ inches deep by $3\frac{1}{2}$ inches wide at the top, $4\frac{1}{2}$ inches deep and $4\frac{1}{2}$ inches wide at the top, $6\frac{1}{2}$ inches deep and $6\frac{1}{2}$ inches wide at the top, $8\frac{1}{2}$ inches deep and $8\frac{1}{2}$ inches wide at the top, 12 inches deep and 12 inches wide at the top, larger sizes to be made upon the same principle. Seed pans 2 feet wide and 7 inches deep. The above is inside measurement.

SOILS.

Whatever soil is used in cultivating plants in pots, it should be prepared some weeks beforehand and ought to be perfectly free from Vermin.

COMPOSTS.

No. 1. Stable manure, containing a large quantity of the refuse of grass on which horses have been fed, and which generally consists of roots, should be laid up to rot for some time until the roots are dead—then mixed with an equal quantity of red earth and laid by in a shady place for a month, the heap should be watered if the weather is dry. This will make an excellent soil suitable for the majority of Exotics and Indigenous shrubs cultivated in pots, especially Roses, or for renewing flower beds.

No. 2. Decayed leaves and vegetables, generally termed Vegetable Mould. Red earth and well decayed manure in equal parts, with a small sprinkling of lime, will be found well suited for rapid growing plants during the cold months.

No. 3. Fine river sand three parts, vegetable mould one, and decayed manure one part. This compost is well adapted for bulbs in general. Dahlias seem to grow well in it, but require liquid manure occasionally.

LIQUID MANURE.

This is a subject of much importance to Flower cultivators, yet one around which "hangs a doubt" as to the judiciousness of intrusting it to the hands of Native Gardeners. In order to prevent any mistake, adhere to the following directions. Whatever ingredients are used in making the liquid, whether Guano, which is best, or cow manure, never allow it to be applied until perfectly clear. Any deviation from this can be easily detected by the appearance of the manure on the surface of the pots, which will prove highly injurious. Never water plants in pots, with liquid manure, more than once a week.

DRAINAGE.

An important item which must not be overlooked. A good

way to preserve the drainage after the broken bricks or potsherds are put in the bottom of the flower pots (previously perforated with good sized holes,) is to cover them over with coarse river sand, when the flower pots used are of a very large size, then it will be necessary to invert on the top of the drainage a small sized pot; this will tend to admit air, and increase the security of perfect drainage.

Horticultural Division of the Seasons in Madras, &c.

Madras.		England.
Spring.		*Spring.*
August,		February,
September,	Sow seeds, plant trees and shrubs.	March,
October.		April.
Summer.		*Summer.*
November,		May,
December,	Vegetables should be plentiful.	June,
January.		July.
Autumn.		*Autumn.*
February,		August,
March,		September,
April.		October.
Winter.		*Winter.*
May,		November,
June,	Protect tender plants from the hot winds.	December,
July.		January.

A select list of popular Flowers cultivated at Madras.

A.

Ageratum.
Aster.
Allamanda.
Angelone.
Antirrhinum.
Aphelandra.

B.

Balsam.
Begonia.
Bignonia.
Brugmansia.
Bulbs.

C.

Cactus.

Campanula.
Carnation.
Cereus.
Cockscomb.
Collinsia.
Chrysanthemum.
Convolvulous (see Ipomea)
Coreopsis.

D.

Dahlia.
Daisy.
Delphinium.

E.

Epiphyllum.
Eranthemum.

F.

Fuchsia.

G.

Gardenia.
Geranium.
Gloriosa.
Gloxinia.

H.

Heliotrope.
Hibiscus.
Honeysuckle.
Holyhocks.

I.

Ipomea.

J.

Jasminum.
Juniperus.
Justicia.

L.

Larkspur (see Delphinium)
Lobelia.
Lophosphermum.

M.

Marigold.
Maurandya.
Mimosa.
Migoonette.
Myrtle.

N.

Nasturtium.
Nemophila.

O.

Œnothera.

P.

Passiflora.
Pansy.
Petrea
Petunia.
Phlox.
Poivrea.
Portulacca.

T.

Thunbergia.

V.

Verbena.
Violet.

Ageratum cœruleum and Sp. Mexicanum.—Well worth cultivating for its pretty blue flowers, propagated from seed and cuttings, will bloom throughout the year if sheltered from the hot winds, must not be too much shaded, if cultivated in pots use a sandy soil.

Aster, German.—This plant is of so short a duration that it will scarcely remunerate for the trouble taken—to raise it, sow seeds at the commencement of the rains; when two inches high put them singly into small pots, they will bloom in a few weeks; require a rich sandy soil.

Allamanda Cathartica.—A pretty climber with showy yellow flowers, propagated by layers or cuttings, too large

for pot culture, thrives best when allowed to ramble amongst shrubs ; native of South America.

Angelone grandiflora.—Commonly called Indian Larkspur, a very useful plant for flower borders, easily propagated by cuttings growing in almost any situation, and constantly in flower ; *color blue.*

Antirrhinium majus. Snapdragon.—A native of England, succeeds well during the cold months, seed should be sown during the rains, grows best in a well drained soil not too rich, it often lives through the hot weather, young plants are preferable.

Aphelandra cristata.—A useful shrub either for pot or border cultivation. Flowers orange colored, easily propagated from cuttings in sand, requires a rich soil and plenty of water ; native of West Indies.

Balsams. Balsamina.—This pretty annual, with its various colors, is well worth cultivating in flower beds, requires to be sown thinly in a box or seed pan ; after the *plants* are 2 or 3 inches high they should be transplanted out singly in well manured soil, if to be grown in pots, they should be put in small sized ones at first and re-potted into larger, when requisite, which will be, when the small pots are filled with roots. The soil best adapted for pot culture is, 2 parts strong loam approaching in appearance to brick earth, and 2 parts well decayed manure, with a *little lime,* which will aid in preventing mildew, so destructive to the Balsam, the pots should be well drained and the plants must never be neglected in watering ; said to be a native of the East Indies, on the plains of which country the fine varieties soon degenerate into weeds ; seeds may be sown every month.

Begonia.—Natives of the Tropics, usually found growing on moist rocks, others upon the stems of trees, they require a rich vegetable soil, mixed with pieces of charcoal, propagated

from cuttings which require to be kept somewhat dry till they root, and by division of the roots also; seed is very uncertain.

Bignonia, trumpet flower.—There are betwixt 60 and 70 known species and varieties, all of which are trees or shrubby climbers; natives of the tropics growing in any situation or soil; do not succeed well in pots owing to their rapid growth.

Brugmansia candida, white trumpet flower.—This handsome plant requires to be planted out in rich soil and in a situation somewhat shaded from the direct rays of the sun, requires plenty of water, easily propagated from cuttings, during the rains almost any branch will grow; native of Peru.

Bulbs.—Imported bulbs do not succeed well in general, this is owing in a great degree to their being disturbed, the best plan to adopt is to prepare a good piece of ground somewhat raised, to throw off the heavy rains and planting each variety by itself in rows, keeping them clear of weeds. Every season, when they begin to grow, stir up the soil and add a little well decayed horse manure. One thing is perfectly evident regarding this species of plants in India, that the more nursing they receive the weaker they become, they seem to relish neglect, under which they flourish in the greatest beauty. If wanted to be grown in pots, the soil should be three parts sand, and one vegetable mould, and decayed manure. When the bloom appears, a watering of liquid manure once or twice a week will aid them greatly. After the leaves are decayed put them in a dry situation till another season; when they begin to show signs of growth let a slight watering for some time be given to enable them to form new roots, then take out one inch of soil, and put in the same quantity of decayed horse manure mixed with a little sand, after which water freely, till the flowers are past when they should be *gradually dried.*

Cactus.—These plants are a very small division of a large family, they are commonly called melon thistle, and rank amongst botanical curiosities; natives of the tropics; grow in brick and lime rubbish with a little well decayed manure and vegetable mould.

Campanula.—Seldom succeeds in Madras, raised from seeds sown during the rains, the seed requires care, being very small.

Carnations, Dianthus caryophyllus.—These plants succeed pretty well so long as they are kept young, but degenerate soon if not propagated annually, this is done by pipings. The soil in which they are grown must be entirely free from vermin; they succeed well in fine river sand to which has been added to every third part one part of well decayed manure. A beautiful genus of plants embracing about 130 species and varieties, besides a host of florists vars.

Cereus.—This is the largest division of the Cactus family, containing about 147 known species and varieties, a beautiful genus of plants and well worthy the attention of amateurs, there being only two or three species to be found in Madras, easily propagated from cuttings in sand and kept pretty dry, grow well in lime rubbish mixed with vegetable mould or loam and manure, all natives of the tropics.

Cocks-combs.—Little better than weeds in Madras, unless planted in well manured soil and watered with good water, they are not worth pot cultivation, raised from seeds in September and October.

Collinsia.—Seeds of this annual often come to Madras, usefulness very doubtful owing to its tender nature; the general cultivated varieties are natives of California.

Chrysanthemum Indicum. Christmas flowers.—There are many varieties of various colors. If grown in pots they require a good rich soil to which pounded bricks should be added

and a little lime to preserve the foliage from mildew to which they are subject. Propagated from division of the roots and cuttings; owing to their succeeding so well in this climate, the introduction of some of the finer varieties from England is worthy of consideration.

Coreopsis, Varieties.—Are annuals well worth cultivating either in pots or the flower garden, raised from seeds, should be sown at various times during the cold months for the purpose of obtaining a succession of bloom, sown in February; they may be had in flower during the hot months, if attended with water, at which season any flower is acceptable.

Dahlia variabilis.—A native of Mexico, the original species were single, the double flowers owe their origin to cultivation. They require a free soil not too rich, owing to the rapid degeneration of the flowers on the plains, they would require to be yearly introduced from England. Ought to be regulated so as to get them in flower after the heavy rains are past, and require to be shaded from the mid-day sun, after flowering, they should be cut down and the roots preserved in pots of sand in a dry place as cool as possible. When they start to grow the following season, if preserved, they should be gently watered for a few days retaining them in the pots of sand, when the shoots are about half an inch long, the roots should be divided with a sharp knife leaving one or two eyes to each division, in a week they may be transplanted into separate pots about 4½ inches wide, after the pots are filled with roots they should be repotted into pots in which they are intended to flower; after growing some size let them be neatly staked, taking care not to injure the roots.

Daisy, Bellis perennis.—This plant and its varieties seldom live through the hot season, and do not remunerate for the trouble taken to raise them, unless required as a " Souvenir"

of home. Easily raised from seeds sown during the rains. Natives of Britain and Italy.

Delphinium, Larkspur.—Succeeds well from Hyderabad seed. Should be sown thinly in middling sized pots, where they ought to be allowed to flower. If too thick when two inches high, thin them out until they are about 2½ inches apart. The annual varieties are natives of Switzerland and England; require a somewhat rich soil.

Epiphyllum.—This is another division of the Cactus family, containing about 20 known species and varieties. Beautiful plants with flat succulent jointed leaves, from the ends of which the flowers proceed. Grow well in coarse river sand, mixed with pieces of charcoal and a little decayed manure. They require care during the heavy rains, propagated by cuttings, every joint of the leaves will strike in sand. Natives of the tropics.

Eranthemum.—The varieties cultivated in Madras are for the most part indigenous, E. pulchellum and E. montanum, grow in almost any soil and situation. E. bicolor requires shade and plenty of water, only fit for borders and flower beds, propagated by cuttings during the rains.

Fuchsia. Varieties.—It is much to be regretted that this splendid family of plants will not succeed on the plains.

Gardenia radicans, Cape Jasmine.—This favourite shrub is well worth all the care it takes, does little good in pots. Should be planted in a well manured flower bed or border which has been drained with sand, they require a soil more approaching to sand than clay and plenty of water; propagated by cuttings in boxes or seed pots during the rains. A native of China.

Geraniums.—The varieties of this plant which are worth cultivating, will not endure the heat at Madras. There are a few scented varieties of a coarse nature, but they require

little care. Propagated by cuttings, which ought to be kept somewhat dry till they root.

Gloriosa.—See Bulbs.

Gloxinia.—The varieties found at Madras are G. maculata and G. caulescens. Both succeed very well, if the roots are started into growth at the commencement of the rains. They require a rich soil well drained. G. caulescens propagated by leaves under glass. G. maculata by division of the roots, require treatment similar to dahlias for the preservation of the roots, they should not be grown in too large pots.

Heliotrope, H. Peruvianum.—Should be grown in a soil more approaching to sand than clay, easily cultivated in pots, or the flower beds, propagated by cuttings in sand under glass. They require to be protected from the hot winds.

Hibiscus, Shoe flower.—In general showy shrubs with various colored flowers. Well adapted for shrubberries, require pruning occasionally to keep them in form, &c. There are more than 80 known species and varieties, all natives of the tropics. Propagated by cuttings and seed during the cold weather.

Holyhocks, Althea rosea.—Varieties.—Well worth cultivating on the plains during the cold months. Seeds should be sown thinly in wooden boxes successively during the rains. When they have found 3 or 4 leaves they should be planted out in the flower garden. Nothing can excel their gaudy appearance, if planted in well prepared soil, where they will grow from 6 to 12 feet high. Owing to their rapid development, it is a doubtful matter if double flowers will ever be had on the plains. They take about six weeks or two months from the time of sowing to flowering. Native of China.

Honeysuckle, Caprifolium.—This genera is seldom to be found on the plains in a very satisfactory condition, with few exceptions, they are generally natives of cold countries,

requiring rich vegetable soil, grow freely from cuttings under glass if not kept too damp.

Ipomea.—Species and varieties, pretty creepers flowering in the morning. They greatly enhance the beauty of Indian gardens, when the various colors are well arranged, raised from seeds sown at the commencement of the rains, they may be sown where intended to flower. Any garden soil will suit, if not too heavy.

Jasminum.—Very pretty shrubs with white and yellow flowers, in most cases scented, the yellow varieties should be grown in pots, being native of the higher latitudes of the tropics, often perish during the hot season, they require a loamy soil well manured, and perfect drainage. The white varieties grow well in the flower borders, requiring to be pruned occasionally, to keep them in proper form, this should be done after flowering.

Juniperus.—Does well in certain situations on the plains, ought to be planted where drainage can be had and protection from the mid-day sun if possible, requires plenty of water during the hot season, propagated by seeds and layers, seedlings preferred.

Justicia.—For the most part shrubs growing in any situation and soil.

Larkspur.—See Delphinium.

Lavender.—Requires pot culture and careful renewing of the stock every season by cuttings, old plants being very uncertain; should be planted in rather poor soil. Seeds sown at the commencement of the rains. Native of the South of Europe.

Lobelia Erinus.— Varieties.— Pretty little procumbent plants, generally having blue flowers, succeed well in the flower beds, raised from seeds. Will not live through the hot weather.

Lophospermum, Scandens and Hendersonii.—Herbaceous climbing plants with pink bell flowers, raised from seeds and cuttings, require a sandy soil, or they will not flower freely. Natives of Mexico.

Marigold, Tagetes patula and erecta.—Any of the species will do well on the plains, they require to be sown thinly in boxes or pots during the rains, when two or three inches high, they should be transplanted into the flower beds, called French and African Marigolds.

Maurandya Barclayana, &c.—Very pretty creepers, with pink, white and blue flowers, require a rich soil, well adapted for mixing amongst other creepers on arbors or trellises.

Mimosa, Sensitive plant.—This vegetable wonder will grow in almost any situation and soil, raised easily from seeds.

Mignonette, Reseda odorata.—A general favorite in all countries, may be had in great luxuriance on the plains during the cold months, does not like to be transplanted, and ought invariably whether in pots or flowers beds to be sown where intended to flower, requires an open soil and free drainage, sometimes lives through the hot season if sheltered by a high building.

Myrtle, Myrtus communis, &c.—A well known favorite, succeeds best in the flower borders, propagated by cuttings in sand under glass.

Nasturtium.—Indian cress. *Tropæolam majus* and *minus*, raised from seeds sown at the commencement of the rains, succeeds well if not too much exposed to the sun, of easy cultivation, seldom produces seed on the plains, the introduction of the other species and varieties cannot be recommended. Natives of Peru.

Nemophila insignis and *maculata.*—Pretty annuals, too tender to succeed well on the plains, N. maculata the spotted

variety succeeds to a certain extent if sown after the heavy rains are past.

Œnothera, Evening Primrose.—There are between 70 and 80 species and varieties of this genera, raised from seeds, cuttings, and layers during the rains, will grow in any good garden soil, succeeds best in the flower beds, requires plenty of water during the hot months, found in various parts of the globe, the majority in North America.

Passion flowers, Passiflora. Varieties.—Beautiful climbers, the greater number of which do well on the plains, they require abundance of water. Not at all adapted for pot culture, easily propagated by cuttings during the rains under glass; some of the common varieties can be propagated in the open air during that season, require a well manured soil. Natives of the Tropics, many of which have been hybridized.

Pansy, Heartsease.—May be raised from seed sown at the commencement of the rains, will hardly repay the trouble.

Petrea volubilis.—Is a beautiful creeper with blue flowers of easy culture, requires exposure to the sun and severe pruning, this should be done at the very commencement of the monsoon, should have plenty of room and good soil, easily propagated by cuttings in the open air during the rains. A Naitve of Vera Cruz.

Petunia. Varieties.—Very useful plants for the flower garden or pots, should be raised from seed at the commencement of the rains, not particular as to soil, but if too rich they do not flower freely, sand three parts and leaf mould and loam one part suit them best. Native of the Tropics.

Phlox, Drummondii and variety *Lepoldina.*—Are useful annuals, succeed well on the plains either in pots or the flower beds, should be sown thinly, and when one or two inches high, transplanted where intended to flower, require in pots a somewhat loamy soil well manured and drained.

Native of Texas, ripens seed freely, which is to be preferred to that imported.

Poivera coccinea Syn Combretum purpureum.—This at present is the popular favorite amongst climbing plants in Madras; requires a trellis not too high, the sooner it gets a procumbent position the more luxuriant it will grow and flower, unfit for pot cultivation, easily propagated by cuttings of the young wood in sand under glass. Native of Madagascar.

Poivera grandiflora Syn Combretum grandiflorum.—Similar to the above in habit but having far superior flowers. Native of S. Leone.

Portulacca.—A pretty little succulent annual, opening its flowers in the sun, raised from seed, requires a sandy soil. Native of the Tropics; requiring little care as regards soil; should be watered sparingly at all times.

Thunbergia.—Creepers with white, yellow and blue flowers, require a free rich sandy soil and plenty of drainage. The large varieties with blue flowers should be planted out and trained upon pillars, trellises or trees. Natives of the Tropics; raised from seeds, cuttings, layers, and suckers.

Verbena.—These pretty little flowering plants are too well known to require describing. They do not endure the heat, will require shelter and good drainage during the hot months. Propagated by layers and cuttings.

Violet.—Sweet scented violets. Requires a good rich soil, shelter from the sun and plenty of water, succeed at Madras and flower freely. Plants to be had from the Hills.